

REMARKS

Claims 1-15 and 17-20 are currently pending in the application. Claim 1 was amended to include the haze limitations of Claim 16 and Claim 16 was cancelled. Reconsideration of the Examiner's rejection in view of Applicants' amendments and arguments is respectfully requested.

Response to Claim Rejections under 35 U.S.C. § 103

The Examiner has the burden of establishing a prima facie case of obviousness. In order to establish obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one skilled in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all of the claim limitations. (see, MPEP 706.02(j)).

Rotter et al.

Priority

Applicants have amended the specification to claim priority to Rotter et al. Rotter et al and the three Cahill patents (U.S. Patent Nos. 6,365,247, 6,083,585 and 6,346,308) noted by the Examiner are all assigned to BP Corporation North America Inc. The present application is a continuation-in-part of U.S. Patent No. 6,406,766 (Rotter et al) which is a CIP of U. S. Patent No. 6,083,585; as well as a CIP of U.S. Patent Nos. 6,365,247, 6,346,308 and 6,506,463. The teachings of the current application that are found in the earlier applications are now entitled to an earlier priority date and those teachings are not prior art against the current application. However, Applicants, in any event, will address the obviousness rejection.

Obviousness

Claims 1-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Rotter et al., U.S. Patent No. 6,406,766. In particular, the Examiner states that Rotter et al. teaches oxygen scavenging compositions for packaging materials comprising a copolymer containing over 50 wt% polycondensate segments such as PET and 0.5-20 wt% oxygen scavenging moieties (OSM) such as unhydrogenated polybutadiene. Examiner believes that it would have been obvious to one of ordinary skill in the art to utilize the formulations disclosed in Rotter et al. to form a single layer package for oxygen sensitive materials and select formulations that have a low amount of

migrating components to prevent contamination of the package contents. Since the composition of Rotter et al. and the present invention are substantially similar, the Examiner states she has reason to believe that the prior art packaging compositions have haze and migration values comparable to those recited in the claims. Applicants respectfully disagree.

Applicants submit that the Examiner has failed to meet her burden of establishing a prima facie case of obviousness as there is nothing in Rotter et al. to teach or suggest that the composition can be used in a monolayer package that is appropriate for direct food contact, and in view of the current amendments, would meet the haze limitations in the pending claims.

First, the teachings in Rotter et al. are directed primarily to multi-layer packages. It was a common view that oxygen scavenging compositions were not appropriate for monolayer packaging applications in direct contact with the oxygen sensitive products. See, for example, U.S. Patent No. 5,834,079 to Blinka et al. where those skilled in the art teach that oxygen scavengers contain oxidation by-products that effect the organoleptic properties of the packaged material even in multi-layer applications.

Second, as illustrated by the table below, the formulations disclosed in the present application are comprised of higher amounts of potentially migrating components and not lower amounts as the Examiner asserts. It would not have been obvious to one skilled in the art to raise the level of components such as Cobalt and PMDA to produce a bottle appropriate for direct food contact with the oxygen sensitive products.

<u>Patent No</u>	<u>Wt% OSM</u>	<u>PPM Cobalt</u>	<u>PPM PMDA</u>	<u>Benzophenone</u>
6,406,766	0.5-12	10-300	10-5,000	100-300
Current application	.05-20 preferably 5-10	50-2000 preferably 500-1500	5,000-20,000 preferably 7500-15000	0-300 preferably 100

Third, Rotter et al. does not suggest or teach the haze values of Claim 1. Monolayer Packages made according to the teachings of Rotter et al. would not meet the haze limitations of amended Claim 1. Monolayer packages made containing the oxygen scavenging composition of the current application have lower haze values than those disclosed in Rotter et al. The better haze values of the current application are, in-part, due to the increase in cobalt concentrations in the oxygen scavenging composition as the cobalt facilitates the initial dispersion of the OSM segments during the extrusion process.

The Examiner has not met the basic criteria to establish obviousness. There is no suggestion or motivation, either in Rotter et al., or in the knowledge generally available to one skilled in the art, to utilize the formulations disclosed in Rotter et al. to form a monolayer package appropriate for direct contact with the oxygen sensitive products. If one skilled in the art modified Rotter et al. it would be to reduce the components of the oxygen scavenging composition as suggested by the Examiner and not to raise them as illustrated above. Finally, Rotter et al. does not teach or suggest the haze limitations in amended Claim 1. Thus, the pending claims of the present application are not obvious in view of Rotter et al.

Speer et al.

Claims 1-4 were also rejected under 35 U.S.C. §103(a) as being unpatentable over Speer et al. (U.S. Patent No. 5,350,622 or 5,700,554). The Examiner states that '622 and '554 each disclose an oxygen scavenging composition for forming single layer packaging materials for oxygen sensitive materials, wherein the composition comprises PET, a polybutadiene (co)polymer, and a transition metal catalyst. The Examiner finds that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the compositions disclosed in Speer et al. in a single layer packaging material to simplify manufacture and recycling. Applicants respectfully disagree.

The Speer et al. patents are directed to blends of ethylenically unsaturated hydrocarbons with a transition metal catalyst, and optionally a polymeric diluent. Although there is a brief reference to single layer article in col. 7 lines 15-17, the teachings are directed primarily to multi-layer polyolefin flexible films. Those films are made by blending diluent polymers such as: ethylene vinyl acetate (EVA) and low density polyethylene with ethylenically unsaturated hydrocarbons such as castor oil and 1,2 polybutadiene, and a transition metal catalyst. (See Examples 1-33). Films made from these blends would not be appropriate for direct food contact nor would they meet the haze limitations of the claimed invention.

A teaching by one skilled in the art that packages made from the blends disclosed in Speer et al., as well as other oxygen scavenging compositions, are not appropriate for direct food contact can be found in a later patent (U.S. Patent No. 5,834,079 hereinafter the '079 patent) also assigned W.R. Grace. Applicants direct the Examiner's attention to col. 4 of the '079 patent which reads as follows:

The ethylenically unsaturated hydrocarbon and transition metal catalyst can be further combined with one or more polymeric diluents, such as thermoplastic polymers which are typically used to form film layers in plastic packaging articles. (lines 12-15) . . .

The mixing of the components listed above is preferably accomplished by melt-blending at temperatures in the range of 50 °C to 300 °C. (lines 37-40).

Although these technologies offers great potential in packaging applications, it has been found that oxygen scavenging structures can sometimes generate reaction by-products which can affect the taste and smell of the packaged material (i.e. organoleptic properties), or raise food regulatory issues. These by-products can include acids, aldehydes and ketones.

The inventors have found that this problem can be minimized by the use of zeolites (such as organophilic zeolites) which absorb odor-causing reaction by-products. (lines 46-55).

The quoted language shows that the blends of ethylenically unsaturated hydrocarbons, transition metal catalysts and optional diluent polymers disclosed in Speer et al., as well as other oxygen scavenging systems set forth in col. 3 of the '079 patent, generate reaction by-products that raise organoleptic and food regulatory issues. The invention disclosed in the '079 patent was the use of "zeolites [to] reduce the concentration of certain extractables which could cause regulatory issues." ('079 patent col. 9 lines 65-68). Thus, contrary to Examiner's assertion, it would not have been obvious to one of ordinary skill in the art at the time the present invention was made to use the compositions disclosed in Speer et al. in a single layer packaging material to simplify manufacture and recycling. One of ordinary skill in the art, including the inventors of the Speer et al. patents, would not consider the compositions disclosed in Speer et al. appropriate for a monolayer package as the compositions disclosed in Speer et al. generate reaction by-products which can affect the organoleptic properties of the packaged material and raise food regulatory issues. In fact, the prior art teaches away from the present invention by teaching the

use of zeolites to reduce the concentration of certain extractables instead of teaching the use of an oxygen scavenging composition with a migration level of components low enough to render it appropriate for direct food contact without the use of zeolites.

It follows that the Examiner has not met the basic criteria to establish obviousness. There is no suggestion or motivation, either in Speer et al., or in the knowledge generally available to one skilled in the art, to modify the teachings of Speer et al. to render the oxygen scavenging compositions disclosed therein appropriate for monolayer applications in direct contact with the oxygen sensitive products. If one skilled in the art modified Speer et al. it would be to use zeolites to reduce the concentration of extractable components of the oxygen scavenging composition. Thus, the pending claims of the present application are not obvious in view of Speer et al.

For all of the above-identified reasons, the pending claims of the present application are not obvious in view of Rotter et al or Speer et al.

If the Examiner believes an oral or telephonic interview would advance the prosecution of this case, the Examiner is encouraged to contact Applicants' attorney at the Examiner's convenience.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jennifer M. Hall", written over a horizontal line.

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